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APPLICATION NO.	1	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,991	0/972,991 10/10/2001		Ping Wai Wan	78945-27 /jlo	4768
29382	7590	07/01/2004		EXAMINER	
TROPIC N			PAYNE, DAVID C		
DR. VICTORIA DONNELLY 135 MICHAEL COWPLAND DRIVE				ART UNIT	PAPER NUMBER
KANATA, ON K2M 2E9				2633	
CANADA				DATE MAILED: 07/01/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/972,991	WAN ET AL.
Office Action Summary	Examiner	Art Unit
	David C. Payne	2633
The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	orrespondence address
A SHORTENED STATUTORY PERIOD FOR REPLY THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply - If NO period for reply is specified above, the maximum statutory period w - Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	86(a). In no event, however, may a reply be time within the statutory minimum of thirty (30) days rill apply and will expire SIX (6) MONTHS from cause the application to become ABANDONEI	nely filed s will be considered timely. the mailing date of this communication. O (35 U.S.C. § 133).
Status		
 1) ⊠ Responsive to communication(s) filed on 10 Oc 2a) ☐ This action is FINAL. 2b) ☒ This 3) ☐ Since this application is in condition for alloward closed in accordance with the practice under E 	action is non-final. nce except for formal matters, pro	
Disposition of Claims		
 4) ☐ Claim(s) 1-15 is/are pending in the application. 4a) Of the above claim(s) is/are withdraw 5) ☐ Claim(s) is/are allowed. 6) ☐ Claim(s) 1-15 is/are rejected. 7) ☐ Claim(s) is/are objected to. 8) ☐ Claim(s) are subject to restriction and/or 		
Application Papers		
9) ☐ The specification is objected to by the Examiner 10) ☑ The drawing(s) filed on 10 October 2001 is/are: Applicant may not request that any objection to the of Replacement drawing sheet(s) including the correction 11) ☐ The oath or declaration is objected to by the Examiner	a)⊠ accepted or b)⊡ objected drawing(s) be held in abeyance. See on is required if the drawing(s) is obj	ected to. See 37 CFR 1.121(d).
Priority under 35 U.S.C. § 119		
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority documents 2. Certified copies of the priority documents 3. Copies of the certified copies of the priority application from the International Bureau * See the attached detailed Office action for a list of the certified copies.	s have been received. s have been received in Application ity documents have been receive I (PCT Rule 17.2(a)).	on No ed in this National Stage
Attachment(s) 1) , Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/11/02 & 1/24/03.	BEST AVAILAE 4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal Pa	(PTO-413)

Application/Control Number: 09/972,991

Art Unit: 2633

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 3. Claims 1-5, 8, 9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedersen et al., WO 99/33200 A (DSC COMMUNICATIONS AS (DK)) 1 July 1999 (hereinafter referred to as Pedersen) in view of Richard Lyons, "Understanding Digital Signal Processing" Addison-Wesley Publishing, 1997, pages 319-349 (hereinafter referred to as Lyons).

Re claims 1-3, 5, 8, Pedersen disclosed

A method of identifying and detecting channels in a multiplexed communications network, comprising the steps of: modulating each channel to be identified with a respective combination of at least two continuous dither tones (page 10, lines 4-11); and detecting the dither tones to detect said channels,

Pedersen does not disclose the step of detecting the dither tones comprising performing an FFT (Fast Fourier Transform) operation to detect dither tones of a channel having a relatively

Page 3

Application/Control Number: 09/972,991

Art Unit: 2633

high power and performing coherent averaging of FFT results over a plurality of FFT operations to detect dither tones of a channel having a relatively low power.

Lyons disclosed using a coherent averaging of FFT results (page 328 1st paragraph). It would have been obvious to one ordinary skill in the art at the time of invention to use coherent averaging of FFT of signals in the Pedersen invention to increase the accuracy of measuring relative signal powers as disclosed in the same passage of Pedersen above.

Re claims 4, Pedersen does not disclose wherein the step of modulating each channel to be identified with a respective combination of at least two continuous dither tones comprises modulating each channel with a respective one of at least three continuous dither tones with a cyclic repetition and a predetermined periodicity. It would have been obvious to one ordinary skill in the art at the time of invention to use more dither tones in order to increase the number of distinguishable patterns.

Re claims 9, 14 and 15 Pedersen does not disclose

the step of detecting intensity modulation of at least one optical signal, detecting dither tones of the optical signal using an FFT (Fast Fourier Transform) operation, and performing coherent averaging of FFT results over a plurality of FFT operations. Lyons disclosed using a coherent averaging of FFT results (page 328 1st paragraph). It would have been obvious to one ordinary skill in the art at the time of invention to use coherent averaging of FFT of signals in the Pedersen invention to increase the accuracy of measuring relative signal powers as disclosed in the same passage of Pedersen above.

Art Unit: 2633

 Claims 6, 7, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedersen et al., WO 99/33200 A (DSC COMMUNICATIONS AS (DK)) 1 July 1999 (hereinafter referred to as Pedersen).

Re claims 6, 7 and 12 Pedersen disclosed

A method of identifying optical channels in an optical WDM network, comprising the steps of: continuously generating dither tones at a plurality of frequencies (page 10, lines 4-11, and page 16 lines 4-9); and intensity modulating (same passage AM modulation)

Pedersen does not disclose each of a plurality of optical channels to be identified with a respective selection of at least two of said dither tones in a cyclically repeated sequence and with a predetermined periodicity. It would have been obvious to one ordinary skill in the art at the time of invention to cyclically repeat the tones so that the entire length of the signal could be coded and hence identified that is coded in perpetuity.

Re claims 10, 11 and 13 Pedersen disclosed

A modulating arrangement comprising: a plurality of continuous dither tone sources; a selector for selecting at least two dither tones (page 10, lines 4-11, and page 16 lines 4-9) Pedersen does not disclose said sources in a cyclically repeated sequence and with a predetermined periodicity; a modulator for modulating a channel of a multiplexed communications network with the cyclically repeated sequence of dither tones from the selector; and a feedback loop for maintaining a predetermined modulation depth of the

Art Unit: 2633

channel by the modulator. It would have been obvious to one ordinary skill in the art at the time of invention to cyclically repeat the tones so that the entire length of the signal could be coded and hence identified that is coded in perpetuity. Furthermore, it would have been obvious to one ordinary skill in the art at the time of invention to use feedback to maintain the modulation depth since feedback loops are well known control mechanism for maintaining parameters with a set of bounds.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (703) 306-0004. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

LESUE PASCAL
PRIMARY EXAMINER